knee extension in the more important extended position of the knee-joint. . . ."

Certain advantages are claimed for excision in place of suture. It is true that the period of immobilization can be reduced and recovery of flexion may be accelerated after excision, but not without risk to the power of extension. The sutured tissues should be given time to unite. Too early efforts to restore mobility have been known to result in disaster. The statement that arthritic changes on the front of the femur are entirely eliminated cannot be accepted; gross arthritic changes have occurred after removal of the bone. Published experimental work on animals suggests such changes are not only probable but inevitable. Bruce and Walmsley (1942) using rabbits found that degenerative changes in the articular cartilage of the patellar surface of the femur followed removal of the patella. Cohn (1944), in two groups of rabbits, adult and young, confirmed this, changes in the cartilage being found in every animal after patellectomy. When only the lower half of the bone had been removed similar degeneration of the cartilage was seen in every adult rabbit, but not in the immature animals. The fact that excision is in many cases an easier operation to perform than accurate suture must not be given undue weight. Which operation is favoured must surely depend chiefly on a comparison of the late results of the two procedures.

So far as I am aware, no considerable series of cases of excision of the patella has been published to support the contention made by Brooke in 1936 that this operation gives better results than suture in transverse fracture of the bone. There is, however, some evidence to the contrary to support our personal observations. An investigation, Brig. Bristow tells me, into the late results in soldiers who had sustained a fracture of the patella showed that of 27 cases treated by excision only 11% were returned to duty in category A, whereas of 31 cases treated by conservative measures, including suture, 80% were returned in category A. These figures may be objected to on the score that more detailed information is required before accepting them at their face value. No doubt those treated by excision included a larger proportion of the more severe types of fracture than the other group. Even if allowance be made for the first group's being the result of greater violence than the second, the figures must surely be regarded as impressive.

Friberg (1941), dealing with cases of chondromalacia and of "adverse sequence of fractures" treated by excision of the patella, reported that the function after excision of the bone was "complete" in 84%, yet no less than 43.8% of his 32 cases complained of insufficient strength and want of reliability and stumbling on rough ground. Seven cases of excision of the patella were followed up by Wass and Davies (1942), and in every single one the result was poor. Unsatisfactory results do, of course, occasionally follow suture, but I believe they are less frequent than after excision, and they could be further reduced in numbers were more attention paid to accurate suturing. As an indication of what can be achieved by skilful suture I may quote Scudder and Miller, who in 1916 published the results in a series of 38 cases. Extension was full in 94% and flexion was full in 60.5%. In 63% capacity for work was unaffected. Mr. F. W. Holdsworth tells me that in a recent follow-up of a small series of 10 cases dealt with by suture he found that in all but one extension was complete, while in only one was flexion less than 130 degrees, and in the exception it amounted to 90 degrees.

When it is decided the bone should be removed much depends on the way the operation is completed. Though it is possible in cases operated upon early to suture the extensor tendon to the ligamentum patellae, it is not really necessary to do this, and probably, as some believe, it is undesirable if the return of full flexion is not to be jeopardized. It is, however, essential that the hole left in the capsule should be reduced in size and prevented from gaping by stitches and not simply covered over with what has been stripped from the front of the bone. The statement that the extensor tendon passes entirely in front of the bone every surgeon knows to be inaccurate. With regard to the care usually taken to keep close to the bone when dissecting out the fragments, attention may be called to the fact that Friberg and also Wass and Davies found that the appearance of more than a trifling amount of calcification and ossification at the site of the patella was a distinct disadvantage and interfered with recovery of function.

Lastly there is the question of removal of the smaller fragment when the bone is broken into two unequal portions. On what grounds it is maintained by those who practise this that the chances of arthritis are materially diminished it is difficult to see. It seems a pity to throw away a fragment which affords the best possible hold for the stitches and which, at the lower pole, may be entirely devoid of cartilage.

I am convinced that the best advice one could give a young surgeon would be to learn to suture the fragments of a fractured patella with accuracy and not to resort to excision of the bone in the hope of getting a rapid result.—I am, etc.,

London, W.1. H. A. T. FAIRBANK.

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The Edinburgh Outbreak of Smallpox, 1942

SIR,—Dr. A. L. Ferguson (June 30, p. 923), writing from South Africa, says: "The deaths from post-vaccinal encephalitis are regretted, but the deaths from smallpox would have been very much greater had not the population of Edinburgh been quickly and adequately protected by the measure of mass vaccination undertaken by the health authority." May I suggest that this assertion is really begging the whole question which it was the express object of my article to discuss. If, as I showed, the outbreak was definitely declining when the mass vaccination campaign was begun, what right has anyone to assert that the deaths would have been much greater?

Dr. Ferguson expresses surprise at the views I hold, but had he been living in this country he would doubtless have been aware of the great change which has taken place in medical opinion on the whole question of vaccination in relation to smallpox in recent years. Perhaps he will be even more surprised when he learns that the Minister of Health in this country, acting on the advice of his Medical Advisory Committee, proposes to terminate the present compulsory system of vaccination, and that the Council of the British Medical Association has agreed to the proposal. I can remember the time when any such proposal would have met with the very strongest opposition from the medical profession. To-day it is likely to meet with practically none, or, more probably, with a sigh of relief. Truly, *tempora mutantur, nos et mutamur in illis.*—I am, etc.,

Leicester. C. KILLICK MILLARD.

Sweating Sickness and Picardy Sweat

SIR,—In your *Journal* for June 2 (p. 792) an inquirer asks if anything is known of the aetiology of sweating sickness which was common in the fifteenth and sixteenth centuries. Your commentator replied that "Hamer gave reasons for thinking that the sweats were epidemics of influenza." The evidence which exists makes this conclusion improbable. A case of this disease which occurred in a soldier in Picardy in 1918 was recorded by the late Dr. Michael Foster in the volume dedicated to Osler on his seventieth birthday (*Contributions to Medical and Biological Research*, **1**, 52, Hoeber, New York, 1919). I discussed this case several times with Foster, and I also had a case under me in 14 Stationary Hospital for Infectious Diseases. Unfortunately the latter case was before Foster's, and the diagnosis was not made.

Sweating sickness first appeared as a new and previously unrecognized disease in 1485, when it attacked and caused a high mortality in the army of King Henry VII which had landed at Milford Haven from France. Between 1485 and 1551 there were at least four large epidemics in England. Caius in 1551 wrote the only medical account in the English language. After 1557 the disease completely vanished from England. Meanwhile it had appeared on the Continent, where it was known as *sudor anglicus*, but it subsequently disappeared for over 100 years.

From the beginning of the eighteenth century epidemics occurred in France of a disease which was called Picardy sweat or *suette miliare*. John Churchill the poet, whose death in 1764 is referred to by your correspondent, was taken ill at

Boulogne. Outbreaks with a high mortality occurred in 1840 and 1880. The last extensive epidemic was in 1906, when 6,000 persons were attacked in a few weeks in the Charentes area. This epidemic was studied by modern methods by a Commission under Chantemesse, but all investigations were negative.

The identity of Picardy sweat and *sudor anglicus* has often been discussed by French authors. The point at issue is the occurrence of an eruption in Picardy sweat, which Caius does not mention. Caius's "Boke" on sweating sickness is lengthy, but mostly consists of philosophical discourses and methods of preparation of herbal remedies. The clinical description is brief and applies to fulminant cases fatal within a few hours, in which type no eruption may develop. But the symptoms which Caius describes recur constantly almost word for word in the French literature of Picardy sweat, and were present in Foster's case. With regard to influenza, Chantemesse assured Foster that there was no resemblance between the two diseases. Certainly the two cases here referred to were not influenza. With plague it has no connexion. There is no substantial reason to doubt the identity of *sudor anglicus* and Picardy sweat.

The epidemics are explosive. They reach their maximum in a few days, maintain it for two or three weeks, tail off, and then completely leave the locality. The case mortality is very variable. In some epidemics the symptoms have been mild and there have been practically no deaths, but in many others the mortality has reached 30 or 40%. The epidemic of 1906 in Charente wiped out whole families in a few days. Deaths are almost confined to fulminant cases, and a fatal ending is rare after 48 hours. Rural areas are affected, and large cities are not attacked. It is not particularly an epidemic of warfare. The Commission of 1906 decided against direct contagion from person to person and attributed infection to the fleas of field mice.

As to the clinical features, the sweats are extraordinarily profuse and are independent of the height of the temperature or of its rise and fall. There are other symptoms which still exhibit the characters described by Caius: paroxysms of precordial pain with sensation of constriction in the chest and upper abdomen, feelings of suffocation and great distress, but there are no catarrhal symptoms and no abnormal signs in the lungs, heart, or cardiovascular system. There are curious sensations in the limbs and joints as of air moving—a description given by Caius, repeated by French authors, and accepted by Foster's patient. In the fulminant cases delirium and collapse rapidly develop, and death often occurs within a few hours of the onset of symptoms.

The eruption appears on the third or fourth day, or occasionally later. There are two factors—an erythema, and glistening white miliaria, which has led to the name *suette miliare* or miliary fever. The miliaria coalesce and form vesicles. The rash starts on the neck and trunk and spreads over the whole or most of the body. The rash has one curious characteristic: it stops at the wrist as if prevented from spreading further, and forms the miliary bracelet, which persists after the eruption has subsided elsewhere. This was present in both the cases in 1918. The eruption lasts a few days and is followed by desquamation. Convalescence is slow, but there are no sequelae.

Such is the disease which at one time was feared even above plague. We may bear in mind Foster's warning: "We should be unwise to regard it as necessarily a disease nearing extinction."—I am, etc.,

London, W.1. HENRY TIDY.

March Fracture

SIR,—The frequency of march fracture (of the foot) and the line of treatment advocated by some are on occasion leading to this injury's being treated rather lightly, with the result that the number of cases coming to my notice where a march fracture has been diagnosed and the soldier kept on duty is increasing. That march fracture is a painful condition most will readily agree, and why the Service man with this disability should be kept going on an admittedly painful foot is difficult to determine. Whatever may be the structural defect which predisposes to the condition it must be admitted that the occurrence of the fracture does not remove it, and continued weight-bearing can do further damage to the foot itself, to say nothing of the effect of the continued pain.

Recently I have seen three cases of multiple march fracture in the same foot, and in all the history has been the same: either the first fracture was overlooked or, if it was diagnosed, it was disregarded and the man kept on his normal or slightly modified duty. In addition I have seen two bilateral cases with very similar histories. The case described below illustrates well the course of events, although this was the only case in which three fractures in one foot were found.

C. E., aged 18; service 6 months. Grade A1. After six weeks' training, towards the end of Dec., 1944, he developed a pain in the left foot during a route march. March fracture was diagnosed and *x*-ray examination confirmed a fracture of the third metatarsal. He was kept off duty for one week and then returned to training. After a week or two he had some further discomfort in the foot, which had never been entirely free from pain, but managed to carry on and complete this part of his course. At the beginning of May, 1945, he again had severe pain in the left foot when marching; he reported sick and was referred to hospital, where *x*-ray examination revealed this most interesting condition: third metatarsal, a healed fracture; fourth metatarsal, a partly healed fracture; second metatarsal, a recent fracture. *X*-ray examination of the right foot revealed no abnormality.

Whether march fracture when first discovered should be treated by simple relief from weight-bearing, by plaster fixation without weight-bearing, or by walking plaster, is probably a matter of personal preference, but all these methods do relieve the man's pain and would prevent multiple fractures; I believe that one or other of them should always be employed, and that keeping infantrymen on duty can hardly be justified.—I am, etc.,

Lancaster. IAN D. KITCHIN.

An Occupational Therapy Department

SIR,—We have recently re-established at Maida Vale Hospital for Nervous Diseases a Department of Occupational Therapy, directed by a member of the Association of Occupational Therapists. This department is now open to receive out-patients from other hospitals, whether neurological, orthopaedic, or general, which lack occupational therapy facilities, or whose facilities are too far from the patients' homes for out-patient attendance. Private patients also are received. I think that the facilities offered by the department, being unusual in Central London, ought to be made known as widely as possible.

The department is well equipped for cases with physical and nervous disorders. Its facilities, when complete, will include evening sessions for those back at work, a children's room, and a homebound service for non-ambulant cases. The charge made is 2s. per patient per session, payable by the sending hospital, except private patients, who are reasonably assessed. Patients are received only on medical prescription, forms for which will be sent on application to the occupational therapist, who will also be glad to show the department to and to discuss possible scope with anyone interested, especially those who may not so far have utilized this treatment. Patients receiving occupational therapy may also, if desired, attend for speech therapy and other rehabilitation departments, which work in conjunction with the Department of Occupational Therapy.—I am, etc.,

WILFRED HARRIS,
London, W.9. Senior Physician, Maida Vale Hospital.

The Integration of Medicine

SIR,—The oration on the integration of medicine by Dr. F. M. R. Walshe, an abridged version of which was published in the *Journal* of May 26, appeared to concern itself more with the general foundations of scientific knowledge than with those simple acts of medical judgment which constitute the bulk of medical practice and in which all medical research culminates. Dr. Walshe deplores the lack of integration of scientific facts "beyond the basic elements of medicine as we know it"; are not just these basic elements at stake when we attempt to assess the scientific foundations of medicine?

The distinction between "liberal" and "useful" professions does indeed throw into relief the unique nature of the physician's work. Even if biological research were to conform to the high standard of integration demanded by Dr. Walshe, the fruits of research would still have to pass the test of clinical application in each individual patient. Research is invalidating,